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ABSTRACT

A high efficiency drivetrain for an agricultural irrigation system is described. The drivetrain includes a ball ramp brake to inhibit movement of a wheel tower when the drive gear motor is not engaged. In one embodiment, the ball ramp brake is a bi-directional ball ramp brake disposed between the drive gear motor and the gearbox of the drivetrain. Utilizing a ball ramp brake such as this, the gearbox can incorporate much more highly efficient gearing mechanisms, such as for example only, involute gears, beveled gears, hypoid gears, planetary gears or the like. The ball ramp brake is enclosed and includes an oil bath that functions to lubricate the components of the brake, preventing corrosion and dissipating heat.

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